REMARKS

This paper is responsive to a non-final Office action dated July 29, 2004. Claims 1-64 were examined. Claims 32-44 and 56-64 are allowed. Claims 1-8, 14, 16-31 and 45-55 were rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter. Claims 1-15 are rejected under 35 U.S.C. § 103(a) as obvious over *Josuttis* in view of *Farook*. Finally, claim 45 has been objected to based on an informality.

Rejections under 35 U.S.C. § 101

Independent claims 1, 16 and 45 have been amended to recite respective encodings in computer readable media. While applicants assert that the claims as originally presented comport with Federal Circuit case law regarding statutory subject matter requirements of 35 U.S.C. § 101, the claims as now amended more clearly recite statutory subject matter. In particular, subject matter recited in claims 1, 16 and 45 (as well as those dependent therefrom) is directed toward a useful, concrete and tangible result and does not constitute abstract algorithm. Withdrawal of the subject matter rejection is respectfully requested.

Obviousness Rejections

Claims 1-15 are rejected under 35 U.S.C. § 103(a) as obvious over *Josuttis* in view of *Farook*. Applicant respectfully traverses.

As a preliminary matter, Applicant respectfully notes that neither reference discloses or suggests a spare node construct in which unused nodes are maintained in a linked-list and indicated using distinguishing values, much less a construct in which concurrent non-interfering access is provided as claimed. As a result, the relied upon references fail to disclose each and every element of the rejected independent claim. The rejection should be withdrawn for this reason alone.

Furthermore, as a legal and technological matter, the obviousness rejection represents an improper combination of references. *Josuttis* is fundamentally limited in its teachings to uniprocessor exploitations, while *Farook* concerns lock-free techniques for concurrent linked-lists. Neither reference provides sufficient teaching as to how its structures or techniques may be

incorporated into the other without destroying operational correctness. As a general matter, it is *very* difficult to achieve correctness in concurrent algorithm implementations and a uniprocessor design cannot be made concurrent simply by stating that another (different) implementation achieves concurrency. In short, concurrency is not a design element that may simply be imported into a *non-concurrent* design.

In the present case, *Josuttis* discloses implementations of a variety of conventional data structures, including a linked-list. However, the disclosed implementations do not contemplate concurrent operations on the list. Indeed, the disclosed implementations assume (as a fundamental matter) uniprocessor operation and require as a matter of correctness that access operations execute as a single thread of execution. *Josuttis* is simply not suitable for concurrent, multiprocessor operations and cannot be modified in any straightforward way to achieve concurrency. *Farook* discloses management of concurrent access to linked lists using lock-free techniques.

Neither *Josuttis* nor *Farook* discloses a technique (uniprocessor or concurrent) that employs distinguishing values to indicate spare nodes in a linked-list. Indeed, applicants respectfully dispute any suggestion (by the Office) that *Josuttis* discloses the missing spare node construct in which unused nodes are maintained in a linked-list and indicated using distinguishing values. However, even if *Josuttis* did disclose such a construct, it is improper to assume that correctness of any concurrent access (of *Farook*) would be maintained if such a hypothetical facility were imported into *Farook's* design.

Accordingly, in the present case, there is simply no teaching (in either *Josuttis* or *Farook*) that would enable a person of ordinary skill in the art to construct a concurrent shared object that employs distinguishing values to indicate spare nodes thereof. Claim 1 (and those dependent therefrom) are allowable for at least this reason and a notice to that effect is respectfully requested.

Informality Objection

Claim 45 has been objected to based on recitation of that includes the phrase "at at least one end ...." Applicant respectfully notes that, though awkward, the recitation is entirely proper.

Conclusion

In summary, claims 1-64 are in the case. All claims are believed to be allowable over the art of record, and a Notice of Allowance to that effect is respectfully solicited. Nonetheless, if any issues remain that could be more efficiently handled by telephone, the Examiner is requested to call the undersigned at the number listed below.

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that, on the date shown below, this correspondence is being

☐ deposited with the US Postal Service with sufficient postage as first class mail, in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

☒ facsimile transmitted to the US Patent and Trademark Office.

David W. O'Brien — 29-Dec-04 (Date)

EXPRESS MAIL LABEL: _____

Respectfully submitted,

David W. O'Brien, Reg. No. 40,107
Attorney for Applicant(s)
(512) 338-6314
(512) 338-6301 (fax)